

Capacity-building and risk mitigation strategies for remote geohazards in Tajikistan

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Local geohazard processes (primarily rock falls, debris flows, and snow avalanches of moderate magnitude) happen all the time in the mountains of Tajikistan and the population has learned how to deal with them. However, the situation is different with remote geohazards of high magnitude and low frequency as shown by the Dasht event in 2002 in the Shakh dara Valley (Southern Pamir). A GLOF washed away a village killing dozens and leaving hundreds homeless. The population was not at all aware of this hazard, though the people knew about the lake up there. On the territory of Tajikistan, GLOFs, large landslides, and other remote geohazards occur at a frequency of few years to decades. The latest GLOF event in spring 2009 in Garm-chashma fortunately only claimed some livestock and bridges.

Targeted and well-planned mitigation measures are required to prevent that future geohazard events will evolve into disasters, or at least to reduce the magnitude of the disaster. This requires a thorough hazard and risk assessment on the one hand, but, equally important, to convert the knowledge gained by such an assessment into strategies and procedures for reducing the risk.

IAG-BOKU and FOCUS Humanitarian Assistance are carrying out a joint project of remote geohazards assessment and mitigation in selected mountain areas of Tajikistan. The results of the assessment (which is described in more detail in the abstract "Assessment of remote geohazards in high mountain areas of Tajikistan with special emphasis on GLOFs and the breach of natural dams" in this volume) are used to design strategies to be integrated in the ongoing risk mitigation program of FOCUS. Such strategies are in particular:

- Promoting the awareness and preparedness for geohazards. Target groups are the stakeholders and the people in the villages. The methods include community mapping (for example to identify possible emergency escape ways) and small information workshops.
- Initiating the monitoring of hazardous situations (change of lake level, condition of dams or slopes, etc.). This work has to involve both local scientists and the local population. Responsibility shall be handed over to the local population, for example by training the people to do simple monitoring tasks by themselves.
- Installing emergency information systems, where necessary. Also here, both the local specialists and the population have to be involved.
- Promoting technical measures towards reducing the risk, like deviation dams and retention basins for mudflows, etc.
- Training of stakeholders, scientists, and the local population to continue the mentioned mitigation measures after the end of the project

In order to enable the realization of all these activities, much emphasis was put on capacity-building of the local actors: all the relevant agencies, scientists, and stakeholders are involved already in the hazard assessment. The leading Tajik scientists in the relevant fields (meteorology/hydrology, glaciology, geology, seismology) took leading positions during the hazard assessment, working together with the European specialists. A workshop was held for enhancing the knowledge of the local specialists (for example in GIS and Remote Sensing). Two of the Tajik scientists involved stay at IAG-BOKU for half a year in order to receive further training. The results of the hazard assessment will be communicated to all the relevant people and agencies in an extended workshop at the end of the assessment.